Docket No.: 07898-051001

Client Ref. No.: PH-709US

AU6 3 0 2000 UNITED STATES PATENT AND TRADEMARK OFFICE

Art Unit : 1655

Examiner: B. Forman

Serial No.: 09/451,666 Filed

Application

: November 30, 1999

Title

: BIOCHIP AND METHOD FOR PRODUCING THE SAME

Commissioner for Patents Washington, D.C. 20231

INFORMATION DISCLOSURE STATEMENT

Applicant submits the references listed on the attached form PTO-1449, copies of which are enclosed. A copy of a communication from a foreign patent office in a counterpart application is also enclosed.

Submitted herewith is an English translation of the following foreign language references, or portions thereof:

| ices, or portions the | | |
|-----------------------|------------|--------|
| Desig. ID | | Source |
| AL | DE 2852886 | |

This Statement is being filed after a first Office Action on the merits, but before receipt of a final Office Action or a Notice of Allowance. I, the undersigned, hereby certify that each item of information contained in this statement was cited in a communication from a foreign patent office in a counterpart foreign application, the communication being dated June 20, 2000, which is not more than three months prior to the filing of this Statement.

Applicants do not believe that any fees are due with this Statement. If, however, it is determined that fees are owed, please apply any charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Robert M. Bedgood, Ph.D

Reg. No. 43,488

8/28/00

Fish & Richardson P.C. 4350 La Jolla Village Drive, Suite 500 San Diego, CA 92122

Telephone: (858) 678-5070 Facsimile: (858) 678-5099

I hereby certify under 37 CFR §1.8(a) that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage on the date indicated below and is addressed to the Commissioner for

Date of Deposit



Europäisches Patentamt

Zweigstelle in Den Haag Recherchenabteilung

European Patent Office

Branch at The Hague Search division Office européeng-L.CC des brevets

Département à La Haye Division de la recherche

| Liesegang, Roland, DrIng. FORRESTER & BOEHMERT Franz-Joseph-Strasse 38 80801 München ALLEMAGNE AUG 30 2000 | FORRESTER & BOEHMERT Eing. 2 3. Juni 2000 Frist: | COP Datum/Date | 2 0. 06. 00 |
|---|--|--|------------------|
| Zeichen/Ref./Réf. FB 8785 | Anmeldung Nr./Application No 9912378 | o/Demande n° /Patent Nr ./Paten 6 . 8 – | t No./Brevet nº. |
| Anmelder/Applicant/Demandeur/Patentinhaber/Propriet Hitachi Software Eng | | | |

COMMUNICATION

| The Europe | an Patent Office herewith transmits | | | |
|---------------|---|-----------------------------------|--------------------------|--|
| X | the European search report | | | |
| | the declaration under Rule 45 EPC | ; | | |
| | the partial European search report | under Rule 45 EPC | | |
| | the supplementary European search relating to the above-mentioned Europeansed. | | | |
| The following | g specifications given by the applica | ant have been approved by the S | Search Division : | |
| | Abstract | ☐ Title | | Figure |
| | The abstract was modified by the S | earch Division and the definitive | text is attached to this | communication. |
| | The following figure will be published the invention than the one indicated Figure: | | arch Division consider | rs that it better characterises |
| ₩. | Additional copy(copies) of the docu | ments cited in the European sea | rch report. | ONISCHES PATER |
| F | REFUND OF THE SE | EARCH FEE | | STATE OF THE PARTY |

If applicable under Article 10 Rules relating to fees, a separate communication from the Receiving Section on the refund of the search fee will be sent later.

| EPO Form 1507 0 | 2.93 | | | |
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| O : non | -written disclosure rmediate document | | same patent fami | | |



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| X : parti Y : parti docu A : tech O : non- | ATEGORY OF CITED DOCUMENTS cularly relevant if taken alone cularly relevant if combined with anot ment of the same category nological background-written disclosure mediate document | T: theory or princ E: earlier patent of after the filling on the comment cite of the c | documen date d in the a d for othe | erlying the int, but publication or reasons | nvention shed on, or |



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| X : pa Y : pa do A : te | CATEGORY OF CITED DOCUMENTS inicularly relevant if taken alone inicularly relevant if combined with anot cument of the same category chnological background on-written disclosure | L : document cited | ocument, but p ate in the applicat for other reaso | oublished on, or iion |

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| COOM to to the track of the tra | X: pa X: pa X: pa A: te O: n P: in | CATEGORY OF CITED DOCUMENTS articularly relevant if taken alone articularly relevant if combined with ano ocument of the same category schnological background on-written disclosure stermediate document | | T: theory or princi E: earlier patent d after the filing d D: document cited L: document cited &: member of the document | ocument, but po ate I in the applicati for other reaso | ublished on, or ion |



LACK OF UNITY OF INVENTION SHEET B

EP 99 12 3786

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. Claims: 1-7

Biochip comprising an array of probes spotted onto a surface wherein the binding agent used to bind the probe is only spotted at the same locations on the surface as the probes. Methods for making said biochip.

2. Claims: 8-12

Pin having a recessed end, said recess taking the form of a concave shape, groove or radially shaped groove. Method of making biochip using said pin.



| CLAIMS INCURRING FEES |
|--|
| The present European patent application comprised at the time of filing more than ten claims. |
| Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s): |
| No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims. |
| LACK OF UNITY OF INVENTION |
| The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely: |
| see sheet B |
| All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims. |
| As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee. |
| Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims: |
| None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims: |
| |

This annex lists the patent family members relating to the patent documents cited in the above–mentioned European search report. The members are as contained in the European Patent Office EDP file on The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

EP 99 12 3786

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

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Europäisches **Patentamt** Zweigstelle in

Den Haag Recherchenabteilung

Eur ean **Patent Office** Branch at The Hague Search

Division

Office européen des brevets Departement a La Have Division de la

recherche

| Liesegang, Roland, D FORRESTER & BOEHMERT Franz-Joseph-Strasse 80801 München | | |
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| ALLEMAGNE | FORRESTER & BOEHMERT | · |
| met D | Eing.: 1 2. April 2000 | Datum/Date 1 0. 04, 2000 |
| L serel fer | Anmeldung Nr./Applica | tion No./Demande n°.//Patent Nr./Patent No./Brevet n° |
| Zeichen/Ref./Ref. FB 8785 | 99123786.8 | 3-1219/ |
| Anmelder/Applicant/Demandeur//Patentinhal Hitachi Software En | ber/Proprietor/Titulaire gineering Co., Ltd | |

COMMUNICATION

The European Patent Office herewith transmits the partial European search report under Rule 46(1) EPC relating to the above-mentioned European patent application.

Copies of the documents cited in the search report are enclosed.

The applicant's attention is drawn to the following:

The search Division informs the applicant that the European search report will also cover inventions other than the invention first mentioned in the claims, a further search fee must be paid for each of these inventions, within ONE MONTH after notification of this communication.

Note to users of the automatic debiting procedure:

Unless the EPO receives prior instructions to the contrary, the search fee(s) will be debited on the last day of the period for payment. For further details see the Arrangements for the automatic debiting procedure, Supplement to OJ EPO 06/1994.

| | Arrangements for the date of the |
|-------------|---|
| | The abstract was modified by the Search Division and the definitive text is attached to the present communication. |
| | The Search Division considers that the present European patent application does not comply with the provisions of the European Patent Convention to such an extent that it is not possible to carry out a meaningful search into the state of the art on the basis of some of the claims. |
| | Claims searched completely: |
| | Claims searched incompletely: |
| | Claims not searched: |
| | Reason for the limitation of the search: |
| \boxtimes | Additional copy (copies) of the documents cited in the European search report. |

REGISTERED LETTER





PARTIAL EUROPEAN SEARCH REPORT

Application Number

under Rule 46, paragraph 1 of the European Patent $\ \ EP\ 99\ 12\ 3786$ Convention

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| | * example 3 * * figure 3 * | | | TECHNICAL FIELDS SEARCHED (Int.CI.7) |
| | * Tigure 5 * | -/ | | G01N C12Q |
| | K OF UNITY OF INVENTI arch Division considers that the present E uirements of unity of invention and relates | urapean natent application does not com | iply with ions. | |
| se | e sheet B | | | |
| The pr | esent partial European search report has application which relate to the invention | been drawn up for those parts of the Eur first mentioned in the claims. Date of completion of the search | | Examiner |
| (2) | Place of search | 9 March 2000 | | outledge, B |
| X: | THE HAGUE CATEGORY OF CITED DOCUMENTS particularly relevant if taken alone particularly relevant if combined with another sections. | T : theory or pring E : earlier paten after the filing D : document ci | nciple underlying It document, but p g date Ited in the applica | the invention published on, or tion |
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PARTIAL EUROPEAN SEARCH REPORT

Application Number

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| Category | Citation of document with indication, where appropriate, of relevant passages | Relevant to claim | | |
| P,X | WO 99 07888 A (BULYK MARTHA L ;CHURCH GEORGE M (US); HARVARD COLLEGE (US)) 18 February 1999 (1999-02-18) * claims 1-15 * * page 12, line 27 - page 13, line 16 * | 1-7 | | |
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LACK OF UNITY OF INVENTION SHEET B

Application Number

EP 99 12 3786

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. Claims: 1-7

Biochip comprising an array of probes spotted onto a surface wherein the binding agent used to bind the probe is only spotted at the same locations on the surface as the probes. Methods for making said biochip.

2. Claims: 8-12

Pin having a recessed end, said recess taking the form of a concave shape, groove or radially shaped groove. Method of making biochip using said pin.

The application lacks novelty as the single general concept linking the two inventions/groups of inventions is merely the use of pins in spotting, a well known technique for creating arrays using nanovolumes, see TIBTECH and Genetic Analysis citations. Furthermore the problem addressed by claims 1-7 is to reduce signal/noise ratio produced by binding of analyte directly to the binding agent rather than to the probe attached to the binding agent itself, the solution being to only provide the binding agent for the probe at the same positions as the probes. The problem of claims 8-12 is to provide an improved pin for use in spotting nanovolumes. The proposed solution is the use of a recessed tip. Thus the two inventions/group of inventions provide different solutions to different problems.

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

EP 99 12 3786

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

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